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Date: March 5, 2007

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:

Appellants: Angela T. Hui

Examiner: Jeffrie R. Lund

Serial No: 10/817,131

Art Unit: 1763

Filing Date: April 2, 2004

Title: IN-SITU SURFACE TREATMENT FOR MEMORY CELL FORMATION

**Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**

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**REPLY BRIEF**

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Dear Sir:

Applicants' representative submits this Reply Brief in response to the Examiner's Answer dated January 5, 2007. In the event any fees are due in connection with this document, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1063 [SPSNP879US].

**REMARKS**

Claims 1-20 are currently pending and are presently under consideration. Claims 21-37 stand withdrawn. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments herein. In particular, the following comments address deficiencies contended in the Examiner's Answer to appellant's Appeal Brief.

**I. Regarding the Rejection of Claims 1-16 and 20 Under 35 U.S.C. §102(b)**

The Examiner incorrectly maintains the rejection of claims 1-16 and 20 under 35 U.S.C. §102(b) as being anticipated by Carducci *et al.* (US 2003/0037880). Appellant's representative respectfully requests that this rejection be reversed for at least the following reasons. Carducci *et al.* fails to disclose all features of the subject claims.

A single prior art reference anticipates a patent claim only if it ***expressly or inherently describes each and every limitation set forth in the patent claim.*** *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002); *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The ***identical invention must be shown in as complete detail as is contained in the ... claim.*** *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

The claimed invention relates to *in-situ* surface treatment for memory cell formation. In particular, independent claim 1 recites a system for *in-situ* surface treatment in fashioning a memory cell comprising a gas distribution system that ***selectively provides a fluorine (F) based gas into a processing chamber;*** and an excitation system that electrically excites the fluorine based gas to establish a plasma in the chamber ***which interacts with a conductive surface to transform the surface from a conductive material into a passive layer.*** Carducci *et al.* is silent regarding such features of the claimed invention.

Carducci *et al.* provides a thermally controlled plasma etch chamber for etch processing of substrates at sub-atmospheric pressure. In the Examiner's Answer, the Examiner contends that the reference only differs from the claimed invention as to the type of substrate that is being acted upon. Appellant's representative respectfully disagrees. Since the claimed invention contemplates exposing an underlying conductive layer to the electrically-excited fluorine-based

gas, it is clear that the fluorine-based gas is selectively only being applied to the underlying layer that is being exposed *via* a trench (as claimed, for example, in claim 4). The cited reference, to the contrary, exposes an entire top surface of substrates within the plasma etch chamber without contemplating a gas distribution system that ***selectively provides a fluorine (F) based gas into a processing chamber*** to an underlying conductive layer as afforded by the claimed invention.

In view of at least the foregoing, it is readily apparent that Carducci *et al.* fails to teach the identical invention in as much detail as is contained in the subject claims. Accordingly, this rejection should be reversed.

## **II. Regarding the Rejection of Claims 1-20 Under 35 U.S.C. §102(e)**

The Examiner incorrectly maintains the rejection of claims 1-20 under 35 U.S.C. §102(e) as being anticipated by Grimbergen *et al.* (US 6,835,275). Appellant's representative respectfully requests that this rejection be reversed for at least the following reasons. Grimbergen *et al.* fails to disclose all aspects recited in the subject claims.

As discussed above, independent claim 1 recites a gas distribution system that ***selectively provides a fluorine (F) based gas into a processing chamber***; and an excitation system that electrically excites the fluorine based gas to establish a plasma in the chamber ***which interacts with a conductive surface to transform the surface from a conductive material into a passive layer***. Grimbergen *et al.* provides a plasma treatment apparatus that is capable of known plasma processing methods. In the Examiner's Answer, it is asserted that Grimbergen *et al.* inherently transforms a conductive layer into a passive layer. However, the gas distribution system of the cited reference is not further capable of limiting exposure of the fluorine-based gas by ***selectively providing the fluorine (F) based gas into a processing chamber*** to transform only the underlying conductive layer of the substrate that is exposed by trenches, for example, as in the claimed invention. Therefore, the cited reference does not provide a system that selectively provides and excites a fluorine-based gas to produce a plasma ***which interacts with a conductive surface to transform the surface from a conductive material into a passive layer***, as afforded by independent claim 1.

In view of at least the foregoing, it is readily apparent that Grimbergen *et al.* fails to teach all limitations of the subject claims. Accordingly, this rejection should be reversed.

**III. Regarding the Rejection of Claims 17-19 Under 35 U.S.C. §103(a)**

The rejection of claims 17-19 have been incorrectly maintained by the Examiner under 35 U.S.C. §103(a) as being unpatentable over Carducci, *et al.* in view of Grimbergen, *et al.* Reversal of this rejection is respectfully requested for at least the following reasons. The subject claims depend from independent claim 1. As discussed *supra*, Carducci *et al.* and Grimbergen *et al.* fail to disclose or suggest all aspects of amended independent claim 1. Accordingly, this rejection should be reversed.

**IV. Conclusion**

The subject application is believed to be in condition for allowance in view of the above comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [SPSNP879US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact appellant's undersigned representative at the telephone number below.

Respectfully submitted,  
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